# Partnering with Alaska Native Communities to Link Science and Traditional Ecological Knowledge of Wild Berry Resources

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Wild berries have occupied an important niche in Alaskan tribal subsistence diets for generations, providing an essential food source and supply of nutrients. In this project, researchers partnered with three Alaska Native tribal communities to investigate the berries' health-promoting properties and assess perceived climate change threats to this resource. Wild berries were evaluated using a novel system of field bioassays, "Screens-to-Nature" (STN), to act as a bridge between traditional ecological knowledge and western science. Using this hands-on field method, berries from all three locations demonstrated potential as antioxidants and glucosidase inhibitors, implying an ability to ameliorate symptoms of metabolic disorders such as obesity and Type II diabetes. Further laboratory investigations revealed high levels of bioactive polyphenolic compounds and substantial cellular and organismal efficacy in reducing fat accumulation and blood glucose levels, validating traditional assertions of berries' role in maintaining community health. Students in each community conducted interviews and helped to administer household surveys to ascertain perspectives on the importance and use of berry resources and observations of climate change impacts on berries. Interview and survey findings revealed that berry resources were highly esteemed not only as a source of food, but also as a vehicle for keeping traditional practices alive and spending time outside with friends and family. Community perspectives on berry health properties varied from little association with health to long-standing knowledge of the healthy attributes of berries. Local knowledge and observations of weather and climate impacts on berry quality and abundance are key to projecting potential impacts of future climate change on this valued subsistence resource. While a few participants voiced some skepticism about science, most partners and community members were enthusiastic about the opportunities provided by this project to blend local and traditional knowledge, youth and community engagement, and scientific discovery and validation of knowledge. This presentation will present the integrated methods and findings from our collaborative project as well as implications for community and environmental well-being. This research is supported by EPA STAR Research Assistance Agreement No. EPA RD-83370701.